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## **ONLINE APPENDIX**

### **The Role of Technology in Business-to-Consumer E-Commerce: Evidence from Asia**

Jong Woo Kang, Tengfei Wang, and Dorothea Ramizo

9 February 2021

Table B1.1: Impact of Internet Access on Internet Retail Sales

Dependent variable: ln(internet retail sales)	Technology Adoption Variables: $lnIUT_{it}$ and $Inserver_{it}$						Lagged Technology Adoption Variables: $lnIUT_{it-1}$ and $Inserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnIUT_{it}$ ( $lnIUT_{it-1}$ )	-0.651 (0.472)	0.793*** (0.160)	1.052*** (0.196)	-2.197 (0.785)	0.417** (0.211)	1.023*** (0.288)	0.192 (0.500)	0.966*** (0.171)	0.621*** (0.183)	1.009*** (0.304)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.678*** (0.164)	0.148*** (0.0557)	0.0313 (0.0583)	0.559*** (0.148)	0.145** (0.0734)	0.00449 (0.0655)	0.416*** (0.128)	0.121** (0.0480)	0.146* (0.0763)	0.0205 (0.0718)
Financial variable proxy	0.311* (0.151)	0.232* (0.120)	0.339*** (0.109)	1.722*** (0.516)	0.669* (0.374)	0.455** (0.205)	0.287** (0.137)	0.172 (0.108)	0.637* (0.337)	0.609*** (0.220)
lninf	0.487 (0.269)	-0.0776 (0.102)	-0.105 (0.0910)	0.210 (0.230)	-0.115 (0.113)	-0.120 (0.0947)	0.0717 (0.169)	-0.142* (0.0767)	-0.0940 (0.104)	-0.106 (0.0971)
tar	0.146 (0.0837)	0.00202 (0.0573)	0.0120 (0.0709)	0.245** (0.104)	0.0732 (0.0771)	0.0584 (0.0909)	-0.0523 (0.0748)	-0.0468 (0.0484)	0.0791 (0.0699)	0.0673 (0.0662)
lnemp	-2.521 (2.185)	0.955 (3.598)	6.727*** (2.586)	0.725 (2.679)	0.423 (3.305)	7.386** (3.294)	-5.830 (3.621)	-0.628 (3.227)	-0.378 (3.465)	4.707 (4.060)
lnntax	-0.260 (0.555)	0.0600 (0.577)	-0.247 (0.436)	-0.990 (0.626)	-0.470 (0.561)	-0.830 (0.653)	1.042 (0.697)	0.949** (0.398)	-0.357 (0.586)	-0.440 (0.680)
lneducp	7.000 (7.590)	0.176 (1.556)	-0.940 (1.401)	13.19* (6.012)	2.815 (3.060)	0.207 (1.920)	0.0447 (2.062)	-1.095 (1.502)	2.721 (3.284)	0.515 (2.577)
lneducs	0.564 (1.608)	1.346 (1.920)	3.833*** (1.373)	2.019 (1.658)	2.941 (2.162)	5.708*** (2.111)	-2.563 (2.077)	-0.215 (1.480)	2.127 (2.148)	4.501** (1.926)
Constant	-16.02 (37.39)	-2.413 (21.13)	-37.92*** (10.53)	-66.49* (31.90)	-20.42 (22.38)	-54.86*** (16.32)	42.09** (18.50)	10.46 (12.72)	-13.77 (23.84)	-41.52** (20.15)
Observations	49	49	49	57	57	57	44	44	57	57
Number of countries	11	11	11	12	12	12	11	11	12	12
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.829	0.127	0.994	0.872	0.358	0.992	0.684	0.996	0.366	0.993
Within R-squared	NA	0.865	0.902	NA	0.828	0.865	0.753	0.915	0.842	0.875

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

Table B1.2: Impact of Fixed Broadband Internet Subscription on Internet Retail Sales

Dependent variable: Internet retail sales	Technology Adoption Variables: $\ln FBIS_{it}$ and $\ln server_{it}$						Lagged Technology Adoption Variables: $\ln FBIS_{it-1}$ and $\ln server_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$\ln FBIS_{it}$ ( $\ln FBIS_{it-1}$ )	-0.119 (0.209)	0.0319 (0.0858)	0.0819 (0.0950)	-0.680 (0.391)	-0.121 (0.141)	0.0632 (0.182)	0.0917 (0.125)	0.171** (0.0867)	0.0171 (0.115)	0.122 (0.150)
$\ln server_{it}$ ( $\ln server_{it-1}$ )	0.678*** (0.173)	0.264*** (0.0741)	0.119** (0.0529)	0.576*** (0.166)	0.185** (0.0799)	0.0702 (0.0735)	0.314*** (0.0702)	0.227*** (0.0724)	0.178** (0.0759)	0.0634 (0.0714)
Financial variable proxy	0.226 (0.145)	0.318*** (0.101)	0.513*** (0.112)	1.151* (0.607)	1.010** (0.393)	0.809** (0.398)	0.238*** (0.0850)	0.123 (0.171)	0.832** (0.347)	0.721** (0.312)
$\ln inf$	0.533* (0.253)	-0.0417 (0.137)	-0.0961 (0.124)	0.278 (0.312)	-0.144 (0.131)	-0.147 (0.130)	-0.0882 (0.118)	-0.149 (0.132)	-0.124 (0.124)	-0.160 (0.120)
$\ln tar$	0.149* (0.0795)	-0.0236 (0.0674)	-0.0221 (0.0879)	0.305** (0.109)	0.0646 (0.0749)	0.0435 (0.0966)	-0.0903 (0.0610)	-0.108 (0.0727)	0.0680 (0.0796)	0.0291 (0.0996)
$\ln emp$	-3.026 (2.508)	-3.571 (4.865)	1.856 (3.248)	0.496 (3.402)	-1.068 (3.325)	3.607 (4.086)	-5.912 (4.076)	-2.707 (4.724)	-1.001 (3.445)	3.429 (4.314)
$\ln tax$	-0.172 (0.589)	0.524 (0.733)	0.232 (0.675)	-0.897 (0.945)	-0.159 (0.625)	-0.287 (0.741)	1.257** (0.588)	1.164** (0.539)	-0.249 (0.608)	-0.331 (0.718)
$\ln educp$	6.437 (7.345)	0.391 (2.556)	-1.801 (2.027)	15.86* (7.901)	3.726 (3.669)	1.046 (2.787)	-1.858 (1.609)	-3.169* (1.688)	3.366 (3.411)	0.357 (2.477)
$\ln educs$	0.124 (1.960)	0.891 (2.046)	5.100** (2.021)	1.169 (3.040)	2.365 (2.138)	6.146** (2.387)	-0.871 (1.029)	0.921 (2.517)	2.828 (2.056)	6.241*** (2.334)
Constant	-11.36 (36.61)	18.11 (26.13)	-17.78 (12.15)	-77.45 (44.71)	-17.23 (23.41)	-44.81** (20.62)	45.09** (19.77)	26.37 (21.54)	-16.79 (23.31)	-40.69* (20.77)
Observations	49	49	49	57	57	57	44	44	57	57
Number of countries	11	11	11	0.823	12	12	11	11	12	12
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.818	0.483	0.990	0.823	0.516	0.990	0.574	0.993	0.464	0.990
Within R-squared	NA	0.764	0.835	NA	0.794	0.830	0.815	0.840	0.802	0.835

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

Table B1.3: Impact of International Internet Bandwidth on Internet Retail Sales

Dependent variable: Internet retail sales	Technology Adoption Variables: $lnIB_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnIB_{it-1}$ and $lnserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnIB_{it}$ ( $lnIB_{it-1}$ )	-0.397* (0.216)	-0.0221 (0.0638)	-0.0240 (0.0539)	-0.709** (0.243)	-0.144 (0.126)	-0.0206 (0.105)	-0.0794 (0.0836)	-0.00346 (0.0721)	-0.0899 (0.0950)	0.0293 (0.0807)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.742*** (0.196)	0.248*** (0.0807)	0.130** (0.0571)	0.754*** (0.175)	0.281** (0.120)	0.0805 (0.0951)	0.373*** (0.109)	0.232*** (0.0878)	0.232** (0.101)	0.0583 (0.0888)
Financial variable proxy	0.147 (0.164)	0.342*** (0.112)	0.571*** (0.0924)	0.327 (0.368)	0.851*** (0.328)	0.906*** (0.284)	0.277*** (0.0645)	0.284** (0.134)	0.850** (0.334)	0.901*** (0.290)
lninf	0.454 (0.309)	-0.0736 (0.120)	-0.119 (0.116)	0.282 (0.263)	-0.129 (0.132)	-0.165* (0.0997)	-0.104 (0.116)	-0.144 (0.129)	-0.156 (0.119)	-0.145 (0.103)
tar	0.101 (0.0861)	-0.0288 (0.0648)	-0.0279 (0.0858)	0.197* (0.0964)	0.0678 (0.0764)	0.0409 (0.0925)	-0.0925 (0.0698)	-0.0871 (0.0883)	0.0608 (0.0727)	0.0455 (0.0957)
lnemp	-1.550 (2.882)	-2.738 (4.834)	1.779 (3.338)	1.978 (3.191)	-2.010 (3.384)	3.496 (4.127)	-5.844 (3.604)	-2.185 (2.747)	-1.541 (3.237)	3.735 (4.240)
Intax	-0.451 (0.662)	0.525 (0.716)	0.287 (0.677)	-1.153 (0.829)	-0.0925 (0.523)	-0.206 (0.761)	1.338** (0.644)	1.105* (0.623)	-0.0931 (0.526)	-0.295 (0.726)
lneducp	7.147 (8.710)	0.0837 (2.580)	-1.711 (2.096)	15.84* (7.807)	5.336 (4.767)	1.378 (3.533)	-1.272 (2.080)	-2.254 (2.260)	4.150 (4.064)	1.089 (3.093)
lneducs	0.917 (2.144)	1.577 (2.020)	5.063** (1.979)	1.759 (2.729)	1.007 (2.113)	5.771** (2.245)	-1.138 (1.487)	1.515 (2.466)	1.883 (2.058)	6.114*** (2.220)
Constant	-22.47 (44.51)	13.25 (25.89)	-17.81 (12.78)	-79.92* (40.84)	-14.27 (26.60)	-44.72** (21.31)	42.98** (18.71)	16.93 (13.99)	-14.40 (23.38)	-45.84** (20.22)
Observations	49	49	49	57	57	57	44	44	57	57
Number of countries	11	11	11	12	12	12	11	11	12	12
Country Fixed Effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.836	0.402	0.990	0.854	0.648	0.990	0.625	0.992	0.563	0.990
Within R-Squared	NA	0.782	0.833	NA	0.763	0.829	0.796	0.824	0.786	0.829

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

Table B1.4: Impact of Mobile Broadband Subscription on Internet Retail Sales

Dependent variable: Internet retail sales	Technology Adoption Variables: $\ln MBS_{it}$ and $\ln server_{it}$						Lagged Technology Adoption Variables: $\ln MBS_{it-1}$ and $\ln server_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$\ln MBS_{it}$ ( $\ln MBS_{it-1}$ )	-0.0829 (0.243)	0.0271 (0.115)	-0.00955 (0.137)	-0.204 (0.205)	-0.0608 (0.0404)	-0.0488 (0.0701)	0.242** (0.114)	0.343*** (0.119)	-0.0314 (0.0678)	0.0998 (0.0934)
$\ln server_{it}$ ( $\ln server_{it-1}$ )	0.686*** (0.163)	0.281*** (0.0802)	0.121** (0.0502)	0.677*** (0.145)	0.177** (0.0813)	0.0727 (0.0776)	0.280*** (0.0560)	0.159*** (0.0554)	0.162** (0.0784)	0.0408 (0.0597)
Financial variable proxy	0.157 (0.180)	0.331*** (0.110)	0.562*** (0.0948)	0.586 (0.404)	0.945*** (0.327)	1.015*** (0.309)	0.270*** (0.0583)	0.391*** (0.125)	0.873*** (0.319)	0.759** (0.295)
$\ln inf$	0.564* (0.289)	-0.0367 (0.147)	-0.129 (0.129)	0.430 (0.317)	-0.151 (0.122)	-0.184* (0.110)	-0.106 (0.108)	-0.136 (0.120)	-0.153 (0.122)	-0.175 (0.120)
$\ln tar$	0.126 (0.0940)	-0.0229 (0.0842)	-0.0333 (0.105)	0.303* (0.150)	0.0396 (0.0807)	0.0240 (0.0949)	-0.108 (0.0671)	-0.125 (0.0762)	0.0276 (0.0869)	-0.0130 (0.0953)
$\ln emp$	-3.727 (2.398)	-4.411 (5.489)	1.152 (4.291)	0.190 (3.815)	-2.017 (3.524)	2.382 (4.447)	-6.501 (4.820)	-3.278 (4.274)	-1.783 (3.549)	3.006 (3.827)
$\ln tax$	-0.180 (0.577)	0.550 (0.755)	0.295 (0.729)	-0.806 (1.034)	-0.0879 (0.602)	-0.113 (0.739)	1.144** (0.566)	0.543 (0.601)	-0.165 (0.599)	-0.381 (0.760)
$\ln educp$	6.983 (8.041)	0.653 (2.870)	-1.742 (2.049)	15.66* (7.886)	3.308 (3.627)	1.452 (3.452)	-1.489 (1.023)	-2.357*** (0.895)	3.267 (3.602)	1.139 (2.971)
$\ln educs$	0.514 (2.549)	0.272 (2.382)	5.222** (2.245)	0.627 (3.111)	2.934 (2.120)	5.791** (2.291)	-1.519 (1.373)	1.089 (2.792)	3.360 (2.124)	6.629*** (2.229)
Constant	-12.24 (42.22)	22.85 (28.04)	-15.76 (16.43)	-70.72 (44.68)	-13.39 (23.16)	-41.17** (20.69)	48.65** (22.24)	24.02 (21.70)	-15.37 (23.42)	-44.02** (20.11)
Observations	47	47	47	55	55	55	42	42	54	54
Number of countries	11	11	11	12	12	12	11	11	12	12
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.821	0.558	0.990	0.815	0.474	0.990	0.540	0.995	0.437	0.991
Within R-squared	NA	0.744	0.831	NA	0.808	0.832	0.861	0.885	0.813	0.842

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

**Table B1.5: Impact of Mobile Telephone Subscription on Internet Retail Sales**

Dependent variable: Internet retail sales	Technology Adoption Variables: $\ln MTS_{it}$ and $\ln server_{it}$						Lagged Technology Adoption Variables: $\ln MTS_{it-1}$ and $\ln server_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$\ln MTS_{it}$ ( $\ln MTS_{it-1}$ )	-1.310 (1.597)	-1.310 (1.597)	1.647*** (0.567)	-3.366*** (0.696)	-0.0387 (0.435)	0.596 (0.654)	-1.410 (1.303)	0.806* (0.412)	0.717 (0.501)	1.027* (0.572)
$\ln server_{it}$ ( $\ln server_{it-1}$ )	0.703*** (0.161)	0.703*** (0.161)	0.0710* (0.0421)	0.748*** (0.144)	0.179** (0.0827)	0.0465 (0.0572)	0.917*** (0.184)	0.148** (0.0686)	0.131* (0.0788)	0.0236 (0.0735)
Financial variable proxy	0.243 (0.155)	0.243 (0.155)	0.345*** (0.121)	1.376*** (0.214)	0.859** (0.404)	0.504 (0.377)	0.326 (0.279)	0.225 (0.204)	0.651* (0.363)	0.570*** (0.212)
lninf	0.612* (0.296)	0.612** (0.296)	-0.167 (0.126)	0.617* (0.287)	-0.138 (0.128)	-0.196 (0.122)	0.710*** (0.261)	-0.194 (0.128)	-0.162 (0.118)	-0.194* (0.112)
tar	0.126 (0.0966)	0.126 (0.0966)	-0.106 (0.0979)	0.197** (0.0842)	0.0376 (0.0899)	-0.0349 (0.0990)	0.222* (0.129)	-0.106 (0.0958)	-0.000735 (0.0829)	-0.0506 (0.0867)
lnemp	-1.558 (3.784)	-1.558 (3.784)	-0.183 (2.284)	3.796 (2.866)	-2.226 (3.611)	2.320 (4.139)	1.395 (4.304)	-3.982** (1.836)	-2.050 (2.702)	2.321 (4.336)
Intax	-0.419 (0.637)	-0.419 (0.637)	0.426 (0.487)	-0.773 (0.631)	-0.210 (0.583)	-0.251 (0.739)	-0.211 (0.698)	1.062* (0.609)	-0.0865 (0.571)	-0.0324 (0.735)
lneducp	5.460 (7.675)	5.460 (7.675)	0.989 (2.170)	0.719 (6.095)	3.715 (3.810)	1.650 (2.804)	1.671 (6.094)	-1.413 (1.978)	2.696 (3.164)	0.295 (2.338)
lneducs	0.576 (1.842)	0.576 (1.842)	2.971 (2.111)	0.645 (1.693)	2.775 (2.157)	6.610*** (2.109)	0.833 (1.444)	1.659 (3.070)	2.412 (2.171)	4.873** (2.345)
Constant	-8.866 (41.06)	-8.866 (41.06)	-18.27* (10.17)	-8.320 (26.95)	-12.96 (26.13)	-44.31** (19.57)	-7.211 (27.82)	17.03 (13.82)	-9.045 (21.32)	-32.84* (19.17)
Observations	45	45	45	53	53	53	41	41	53	53
Number of countries	10	10	10	11	11	11	10	10	11	11
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.831	0.831	0.993	0.833	0.479	0.991	0.867	0.994	0.357	0.992
Within R-squared	NA	0.458	0.887	NA	0.803	0.844	0.427	0.859	0.842	0.868

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

Table B1.6: Impact of Fixed Telephone Lines on Internet Retail Sales

Dependent variable: Internet retail sales	Technology Adoption Variables: $\ln FTL_{it}$ and $\ln server_{it}$						Lagged Technology Adoption Variables: $\ln FTL_{it-1}$ and $\ln server_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$\ln FTL_{it}$ ( $\ln FTL_{it-1}$ )	0.281 (0.565)	0.281 (0.565)	-0.349 (0.345)	-0.365 (0.559)	-0.266 (0.270)	0.0551 (0.328)	0.193 (0.557)	-0.645** (0.278)	-0.326 (0.379)	-0.343 (0.306)
$\ln server_{it}$ ( $\ln server_{it-1}$ )	0.682*** (0.150)	0.682*** (0.150)	0.0867** (0.0392)	0.610*** (0.145)	0.270*** (0.102)	0.0599 (0.0625)	0.869*** (0.191)	0.149* (0.0813)	0.306*** (0.113)	0.0480 (0.0680)
Financial variable proxy	0.0749 (0.224)	0.0749 (0.224)	0.534*** (0.0864)	0.663 (0.517)	1.027*** (0.388)	0.898*** (0.295)	0.0441 (0.200)	0.437*** (0.144)	1.062** (0.442)	0.775** (0.312)
lninf	0.627** (0.298)	0.627** (0.298)	-0.140 (0.127)	0.384 (0.335)	-0.0108 (0.185)	-0.184 (0.116)	0.656** (0.271)	-0.125 (0.114)	0.0457 (0.207)	-0.163 (0.113)
tar	0.0956 (0.0945)	0.0956 (0.0945)	-0.0897 (0.0801)	0.346** (0.144)	0.0929 (0.118)	-0.00437 (0.107)	0.155* (0.0911)	-0.140* (0.0823)	0.114 (0.121)	-0.0290 (0.0914)
lnemp	-6.082* (3.631)	-6.082* (3.631)	0.710 (4.779)	1.356 (4.947)	-2.439 (3.902)	2.446 (4.612)	-3.106 (3.822)	-1.847 (3.358)	-1.703 (4.327)	2.854 (-3.944)
Intax	-0.159 (0.555)	-0.159 (0.555)	0.526 (0.682)	-1.000 (1.013)	-0.334 (0.673)	-0.252 (0.800)	-0.254 (0.717)	0.882 (0.624)	-0.472 (0.729)	-0.175 (0.777)
lneducp	5.940 (6.757)	5.940 (6.757)	-0.959 (2.329)	18.36* (8.261)	8.137 (5.498)	1.350 (3.317)	2.960 (5.595)	-2.290* (1.301)	8.898 (5.750)	0.586 (3.110)
lneducs	0.103 (1.732)	0.103 (1.732)	4.487* (2.379)	0.656 (3.060)	-0.697 (2.349)	6.363** (2.480)	0.586 (1.679)	2.082 (2.678)	-1.151 (2.404)	6.201*** (2.307)
Constant	3.509 (33.57)	3.509 (33.57)	-12.76 (18.40)	-87.46 (53.49)	-18.44 (30.22)	-42.60* (23.68)	1.769 (26.75)	15.56 (15.94)	-23.25 (32.67)	-38.05 (23.78)
Observations	45	45	45	53	53	53	41	41	53	53
Number of countries	10	10	10	11	11	11	10	10	11	11
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.831	0.831	0.991	0.815	0.720	0.991	0.859	0.994	0.743	0.991
Within R-squared	NA	0.501	0.852	NA	0.701	0.839	0.493	0.864	0.682	0.843

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.



**Table B1.7: Impact of Internet Access on Mobile Internet Retail Sales**

Dependent variable: Ln(mobile internet retail sales)	Technology Adoption Variables: $lnIUT_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnIUT_{it-1}$ and $lnserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnIUT_{it}$ ( $lnIUT_{it-1}$ )	-0.453 (0.551)	-0.453 (0.551)	1.548** (0.785)	-2.391** (1.045)	-0.0523 (1.374)	1.437 (1.837)	-0.396 (0.525)	1.057* -0.546	-0.774 (0.949)	0.384 (1.151)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.930*** (0.135)	0.930*** (0.135)	0.376*** (0.121)	0.776*** (0.113)	0.485*** (0.0888)	0.279 (0.172)	1.192*** (0.165)	0.514*** (0.106)	0.766*** (0.128)	0.502** (0.231)
Financial variable proxy	0.435 (0.299)	0.435 (0.299)	1.448*** (0.328)	0.776*** (0.113)	3.059** (1.280)	2.339* (1.214)	0.146 (0.272)	1.491*** (0.351)	2.866** (1.227)	2.732** (1.291)
lninf	0.313 (0.316)	0.313 (0.316)	-0.104 (0.138)	0.0767 (0.298)	-0.0717 (0.158)	-0.174 (0.157)	0.357 (0.285)	-0.0820 (0.122)	0.0902 (0.200)	-0.140 (0.169)
tar	-0.0845 (0.106)	-0.0845 (0.106)	-0.0343 (0.155)	0.0463 (0.128)	0.0739 (0.173)	0.116 (0.219)	-0.0927 (0.0757)	-0.0599 (0.150)	0.0853 (0.148)	0.0716 (0.191)
lnemp	-5.196** (2.592)	-5.196** (2.592)	-7.400 (9.647)	-3.459 (2.249)	-11.28*** (2.391)	-11.23 (7.359)	-1.878 (2.619)	-11.35 (9.561)	-8.204*** (3.058)	-17.33** (8.236)
Intax	-0.336 (0.694)	-0.336 (0.694)	-0.278 (1.143)	-0.620 (0.814)	0.0315 (0.950)	-1.244 (1.923)	-0.683 (0.705)	0.147 (1.091)	0.181 (0.700)	-0.343 (1.572)
lneducp	-0.947 (6.937)	-0.947 (6.937)	-2.846 (4.896)	0.829 (9.160)	3.107 (7.863)	1.302 (7.988)	-4.728 (5.621)	-4.056 (5.691)	1.125 (7.715)	0.814 (8.884)
lneducs	-1.549 (1.756)	-1.549 (1.756)	0.460 (3.759)	0.801 (1.893)	-1.429 (3.966)	2.403 (6.477)	-0.771 (1.185)	1.297 (3.446)	0.110 (2.856)	1.423 (5.448)
Constant	36.6 (37.11)	36.6 (37.11)	32.25 (45.68)	2.294 (42.97)	25.18 (41.57)	14.13 (54.44)	36.95 (30.56)	50.76 (43.73)	16.12 (38.04)	45.27 (66.50)
Observations	42	42	42	47	47	47	42	42	47	47
Number of countries	10	10	10	11	11	11	10	10	11	11
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.885	0.885	0.984	0.860	0.738	0.973	0.905	0.983	0.807	0.974
Within R-squared	NA	0.709	0.894	NA	0.819	0.841	0.689	0.889	0.802	0.844

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

Table B1.8: Impact of Fixed Broadband Internet Subscription on Mobile Internet Retail Sales

Dependent variable: ln(mobile internet retail sales)	Technology Adoption Variables: $lnFBIS_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnFBIS_{it-1}$ and $lnserver_{it-1}$			
	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnFBIS_{it}$ ( $lnFBIS_{it-1}$ )	-0.278 (0.245)	-0.278 (0.245)	0.385** (0.192)	-1.285 (0.861)	-1.285 (0.861)	0.538 (0.421)	-0.247 (0.277)	0.685*** (0.125)	-1.262* (0.747)	0.719*** (0.161)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.905*** (0.133)	0.905*** (0.133)	0.478*** (0.0949)	0.682*** (0.189)	0.682*** (0.189)	0.353** (0.174)	1.164*** (0.171)	0.604*** (0.131)	0.848*** (0.225)	0.485** (0.241)
Financial variable proxy	0.493 (0.358)	0.493 (0.358)	1.753*** (0.260)	2.923* (1.596)	2.923* (1.596)	2.810*** (0.658)	0.166 (0.316)	1.590** (0.357)	2.518 (1.583)	2.886*** (0.814)
lninf	0.314 (0.317)	0.314 (0.317)	-0.0792 (0.165)	0.0101 (0.331)	0.0101 (0.331)	-0.107 (0.149)	0.372 (0.277)	-0.0846 (0.156)	0.174 (0.329)	-0.115 (0.145)
tar	-0.0693 (0.106)	-0.0693 (0.106)	-0.0968 (0.159)	0.155 (0.148)	0.155 (0.148)	0.0731 (0.174)	-0.0691 (0.0737)	-0.161** (0.0785)	0.218 (0.158)	0.00208 (0.115)
lnemp	-5.583** (2.557)	-5.583** (2.557)	-12.29* (6.460)	-4.271 (2.950)	-4.271 (2.950)	-16.08* (9.503)	-2.407 (2.615)	-13.33 (8.461)	-2.831 (3.270)	-17.49 (13.14)
Intax	-0.232 (0.627)	-0.232 (0.627)	0.199 (1.120)	-0.392 (1.028)	-0.392 (1.028)	-0.616 (1.700)	-0.668 (0.653)	0.640 (1.203)	-0.927 (1.122)	-0.182 (1.886)
lneducp	-0.653 (6.999)	-0.653 (6.999)	-3.632 (5.529)	5.018 (10.15)	5.018 (10.15)	1.444 (8.646)	-3.147 (6.535)	-7.903*** (2.921)	8.667 (12.25)	-2.512 (5.443)
lneducs	-1.346 (1.986)	-1.346 (1.986)	1.983 (3.422)	2.114 (4.012)	2.114 (4.012)	2.436 (6.257)	-0.336 (1.395)	0.425 (3.980)	3.582 (3.469)	-0.150 (6.486)
Constant	34.44 (37.78)	34.44 (37.78)	51.65 (38.79)	-26.58 (57.74)	-26.58 (57.74)	33.34 (63.97)	28.95 (35.16)	81.51** (41.11)	-53.59 (66.93)	67.07 (74.97)
Observations	42	42	42	47	47	47	42	42	47	47
Number of countries	10	10	10	11	11	11	10	10	11	11
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.885	0.885	0.981	0.844	0.844	0.974	0.904	0.986	0.851	0.979
Within R-squared	NA	0.720	0.879	NA	0.635	0.846	0.691	0.912	0.599	0.876

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

**Table B1.9: Impact of International Internet Bandwidth on Mobile Internet Retail Sales**

Dependent variable: ln(mobile internet retail sales)	Technology Adoption Variables: $lnIIB_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnIIB_{it-1}$ and $lnserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnIIB_{it}$ ( $lnIIB_{it-1}$ )	-0.348 (0.232)	-0.348 (0.232)	0.0945 (0.175)	-0.799* (0.372)	0.0291 (0.302)	0.165 (0.295)	-0.289** (0.122)	0.146 (0.167)	-0.0540 (0.221)	0.156 (0.177)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.956*** (0.142)	0.956*** (0.142)	0.492*** (0.0962)	0.963*** (0.143)	0.489*** (0.115)	0.315* (0.171)	1.227*** (0.165)	0.545*** (0.0953)	0.732*** (0.144)	0.411* (0.220)
Financial variable proxy	0.413 (0.290)	0.413 (0.290)	1.744*** (0.391)	1.355 (0.911)	2.999*** (0.860)	3.568*** (0.868)	0.0764 (0.248)	1.689*** (0.357)	2.518*** (0.753)	3.250*** (0.827)
lninf	0.317 (0.336)	0.317 (0.336)	-0.114 (0.175)	0.136 (0.341)	-0.0484 (0.167)	-0.130 (0.124)	0.310 (0.285)	-0.0253 (0.156)	0.0469 (0.199)	-0.0648 (0.150)
tar	-0.119 (0.0877)	-0.119 (0.0877)	-0.138 (0.141)	0.0171 (0.115)	0.0829 (0.133)	0.0810 (0.170)	-0.119** (0.0585)	-0.0864 (0.167)	0.0961 (0.135)	0.0933 (0.180)
lnemp	-5.130** (2.540)	-5.130** (2.540)	-12.55** (6.391)	-2.487 (3.154)	-10.88*** (3.049)	-16.84* (9.737)	-1.661 (2.477)	-11.33* (6.271)	-8.852*** (3.242)	-16.23* (9.372)
Intax	-0.242 (0.733)	-0.242 (0.733)	0.479 (1.205)	-0.669 (1.179)	-0.00521 (0.907)	-0.442 (1.804)	-0.709 (0.635)	0.168 (1.208)	0.0918 (0.691)	-0.536 (1.581)
lneducp	-1.110 (7.614)	-1.110 (7.614)	-4.302 (5.483)	5.172 (12.00)	3.075 (7.961)	2.526 (9.492)	-5.197 (5.998)	-5.296 (5.678)	1.473 (7.603)	1.251 (8.886)
lneducs	-0.970 (2.261)	-0.970 (2.261)	0.803 (3.794)	1.469 (3.553)	-1.650 (3.935)	0.632 (6.372)	-0.394 (1.323)	3.831 (3.553)	-0.747 (3.014)	2.390 (4.919)
Constant	33.88 (42.96)	33.88 (42.96)	61.60 (39.87)	-22.01 (66.18)	24.73 (45.87)	35.70 (61.10)	36.24 (31.07)	47.41 (37.56)	21.23 (40.11)	32.69 (57.99)
Observations	42	42	42	47	47	47	42	42	47	47
Number of countries	10	10	10	11	11	11	10	10	11	11
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.891	0.891	0.980	0.857	0.736	0.973	0.910	0.980	0.769	0.975
Within R-squared	NA	0.672	0.871	NA	0.818	0.837	0.667	0.873	0.815	0.848

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

Table B1.10: Impact of Mobile Broadband Subscription on Mobile Internet Retail Sales

Dependent variable: ln(mobile internet retail sales)	Technology Adoption Variables: $\ln MBS_{it}$ and $\ln server_{it}$						Lagged Technology Adoption Variables: $\ln MBS_{it-1}$ and $\ln server_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$\ln MBS_{it}$ ( $\ln MBS_{it-1}$ )	0.0240 (0.248)	0.0240 (0.248)	0.278 (0.193)	-0.0874 (0.300)	0.363** (0.144)	0.352* (0.185)	-0.0411 (0.170)	0.800*** (0.144)	0.607*** (0.172)	0.783*** (0.0996)
$\ln server_{it}$ ( $\ln server_{it-1}$ )	0.932*** (0.154)	0.932*** (0.154)	0.536*** (0.113)	0.911*** (0.166)	0.419*** (0.115)	0.367* (0.191)	1.206*** (0.173)	0.529*** (0.113)	0.512*** (0.172)	0.434* (0.232)
Financial variable proxy	0.413 (0.382)	0.413 (0.382)	1.751*** (0.250)	1.632 (0.993)	3.357*** (0.720)	3.650*** (0.754)	0.108 (0.368)	1.804*** (0.349)	2.942*** (0.679)	2.936*** (0.698)
lninf	0.387 (0.363)	0.387 (0.363)	-0.0303 (0.186)	0.303 (0.405)	-0.00107 (0.124)	-0.0294 (0.144)	0.431 (0.318)	0.0392 (0.141)	0.0210 (0.131)	0.00866 (0.151)
tar	-0.0621 (0.130)	-0.0621 (0.130)	-0.0696 (0.150)	0.183 (0.191)	0.159 (0.150)	0.156 (0.171)	-0.0816 (0.110)	-0.0840 (0.102)	0.120 (0.119)	0.0672 (0.109)
lnemp	-5.545** (2.685)	-5.545** (2.685)	-6.526 (5.675)	-3.274 (3.700)	-8.902** (3.716)	-10.11 (10.38)	-2.054 (2.519)	-6.631 (7.965)	-9.258*** (3.375)	-10.43* (5.452)
Intax	-0.112 (0.811)	-0.112 (0.811)	0.492 (1.146)	-0.402 (1.247)	-0.394 (1.299)	-0.517 (1.888)	-0.496 (0.902)	-0.658 (1.455)	-0.601 (1.305)	-1.108 (1.789)
lneducp	-1.664 (6.996)	-1.664 (6.996)	-4.648 (3.689)	4.991 (9.834)	1.567 (5.652)	1.933 (7.017)	-5.567 (5.961)	-6.163*** (2.012)	-0.442 (4.484)	-1.252 (4.177)
lneducs	-2.208 (2.875)	-2.208 (2.875)	-2.416 (4.975)	-0.679 (4.235)	-3.703 (4.861)	-3.010 (7.618)	-1.137 (1.814)	0.380 (3.848)	-2.133 (4.581)	-1.402 (6.260)
Constant	42.01 (41.57)	42.01 (41.57)	51.62** (24.24)	-13.66 (60.67)	29.73 (38.40)	25.44 (66.15)	41.47 (32.34)	46.82 (41.03)	35.88 (36.83)	38.67 (48.14)
Observations	41	41	41	46	46	46	40	40	45	45
Number of countries	10	10	10	11	11	11	10	10	11	11
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.879	0.879	0.984	0.813	0.704	0.976	0.900	0.988	0.636	0.981
Within R-squared	NA	0.756	0.891	NA	0.853	0.855	0.728	0.919	0.878	0.882

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

**Table B1.11: Impact of Mobile Telephone Subscription on Mobile Internet Retail Sales**

Dependent variable: ln(mobile internet retail sales)	Technology Adoption Variables: $lnMTS_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnMTS_{it-1}$ and $lnserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnMTS_{it}$ ( $lnMTS_{it-1}$ )	1.029 (2.261)	1.029 (2.261)	5.563*** (1.235)	-4.592*** (1.050)	-4.592*** (1.050)	6.944*** (1.301)	-0.0495 (1.182)	2.540** (1.153)	-3.201*** (0.859)	3.445** (1.634)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.888*** (0.147)	0.888*** (0.147)	0.391*** (0.0622)	1.042*** (0.163)	1.042*** (0.163)	0.236** (0.104)	1.194*** (0.176)	0.460*** (0.125)	1.354*** (0.213)	0.309 (0.195)
Financial variable proxy	0.139 (0.535)	0.139 (0.535)	0.681** (0.317)	1.638* (0.861)	1.638* (0.861)	1.380*** (0.501)	0.0245 (0.430)	1.037*** (0.351)	1.118 (0.824)	1.755** (0.889)
lninf	0.337 (0.323)	0.337 (0.323)	-0.208 (0.156)	0.311 (0.390)	0.311 (0.390)	-0.211 (0.139)	0.423 (0.304)	-0.127 (0.145)	0.370 (0.378)	-0.202 (0.174)
tar	-0.152 (0.160)	-0.152 (0.160)	-0.109 (0.0827)	0.0307 (0.130)	0.0307 (0.130)	-0.00724 (0.0643)	-0.119 (0.128)	-0.0453 (0.142)	0.146 (0.130)	0.0894 (0.105)
lnemp	-8.874* (4.537)	-8.874* (4.537)	-17.59*** (3.943)	5.974 (4.038)	5.974 (4.038)	-19.48*** (6.924)	-2.523 (3.755)	-8.829*** (3.181)	8.694* (4.939)	-12.11 (9.037)
Intax	-0.410 (0.913)	-0.410 (0.913)	0.812 (1.067)	-1.304 (1.208)	-1.304 (1.208)	-0.373 (1.213)	-0.675 (0.906)	0.570 (1.178)	-1.099 (1.170)	-0.166 (1.669)
lneducp	0.571 (7.142)	0.571 (7.142)	4.533 (3.583)	-5.611 (10.08)	-5.611 (10.08)	8.422*** (2.302)	-5.548 (6.425)	-3.959 (4.831)	-5.235 (8.464)	0.213 (6.148)
lneducs	-1.573 (2.125)	-1.573 (2.125)	-3.282 (3.752)	-0.954 (2.178)	-0.954 (2.178)	-0.772 (4.717)	-1.130 (1.621)	1.517 (4.165)	-0.353 (1.856)	1.885 (5.240)
Constant	40.71 (37.90)	40.71 (37.90)	40.60*** (15.25)	20.29 (54.87)	20.29 (54.87)	9.791 (33.77)	44.41 (31.20)	32.69 (22.34)	-1.349 (44.82)	16.38 (45.95)
Observations	39	39	39	44	44	44	39	39	44	44
Number of countries	9	9	9	10	10	10	9	9	10	10
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.888	0.888	0.989	0.861	0.861	0.989	0.904	0.986	0.862	0.983
Within R-squared	NA	0.764	0.924	NA	0.507	0.931	0.723	0.906	0.507	0.895

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

Table B1.12: Impact of Fixed Telephone Lines on Mobile Internet Retail Sales

Dependent variable: ln(mobile internet retail sales)	Technology Adoption Variables: $lnFTL_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnFTL_{it-1}$ and $lnserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnFTL_{it}$ ( $lnFTL_{it-1}$ )	-0.109 (0.833)	-0.109 (0.833)	-0.991 (0.908)	-1.304 (0.939)	-1.304 (0.939)	0.0845 (1.183)	-0.296 (0.870)	-1.542* (0.816)	-1.350 (0.825)	-0.817 (1.005)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.914*** (0.132)	0.914*** (0.132)	0.428*** (0.136)	0.722*** (0.153)	0.722*** (0.153)	0.389** (0.160)	1.188*** (0.158)	0.503*** (0.144)	1.064*** (0.143)	0.475* (0.260)
Financial variable proxy	0.308 (0.691)	0.308 (0.691)	1.976*** (0.208)	2.611* (1.376)	2.611* (1.376)	3.736*** (1.151)	0.239 (0.611)	1.833*** (0.504)	2.232* (1.257)	3.001*** (1.109)
lninf	0.377 (0.304)	0.377 (0.304)	-0.0725 (0.150)	0.338 (0.305)	0.338 (0.305)	-0.129 (0.144)	0.470* (0.276)	0.0639 (0.139)	0.422 (0.286)	-0.0326 (0.187)
tar	-0.124 (0.171)	-0.124 (0.171)	-0.149 (0.133)	0.175 (0.157)	0.175 (0.157)	0.131 (0.182)	-0.0670 (0.175)	-0.125 (0.105)	0.213 (0.137)	0.0796 (0.140)
lnemp	-6.020 (4.165)	-6.020 (4.165)	-7.045 (8.355)	-1.418 (3.823)	-1.418 (3.823)	-13.81 (12.32)	-1.455 (4.700)	-3.404 (6.760)	3.715 (4.111)	-11.40 (8.808)
Intax	-0.485 (0.909)	-0.485 (0.909)	0.774 (1.255)	-0.770 (1.210)	-0.770 (1.210)	-0.205 (2.066)	-0.576 (0.780)	0.112 (1.362)	-0.723 (1.094)	-0.395 (1.905)
lneducp	-0.778 (7.329)	-0.778 (7.329)	-2.249 (6.876)	6.822 (11.04)	6.822 (11.04)	3.196 (9.434)	-5.187 (5.753)	-6.168** (3.015)	0.954 (8.300)	-0.136 (6.785)
lneducs	-1.563 (2.048)	-1.563 (2.048)	-0.640 (4.226)	1.629 (3.971)	1.629 (3.971)	-0.710 (7.866)	-0.899 (1.753)	2.755 (3.955)	1.524 (3.234)	1.403 (7.297)
Constant	39.04 (40.24)	39.04 (40.24)	38.33 (33.29)	-41.52 (64.79)	-41.52 (64.79)	24.31 (72.68)	36.29 (36.16)	28.60 (29.79)	-35.35 (50.81)	27.60 (62.56)
Observations	39	39	39	44	44	44	39	39	44	44
Number of countries	9	9	9	10	10	10	9	9	10	10
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.887	0.887	0.982	0.850	0.850	0.972	0.905	0.984	0.861	0.975
Within R-squared	NA	0.744	0.878	NA	0.757	0.828	0.750	0.894	0.785	0.845

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

**Table B1.13: Impact of Internet Penetration on Foreign Internet Retail Sales**

Dependent variable: ln(foreign internet retail sales)	Technology Adoption Variables: $lnIUT_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnIUT_{it-1}$ and $lnserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnIUT_{it}$ ( $lnIUT_{it-1}$ )	0.636 (0.543)	0.636 (0.543)	1.020** (0.463)	-0.365 (0.546)	-0.365 (0.546)	0.666 (0.409)	0.619 (0.377)	0.937*** (0.0811)	-0.342 (0.480)	0.519 (0.424)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.423*** (0.138)	0.423*** (0.138)	0.148* (0.0797)	0.374** (0.159)	0.374** (0.159)	0.0702 (0.103)	0.583*** (0.169)	0.207*** (0.0482)	0.497*** (0.164)	0.166 (0.133)
Financial Variable Proxy	0.423** (0.197)	0.423** (0.197)	0.0180 (0.173)	1.607*** (0.458)	1.607*** (0.458)	1.168** (0.583)	0.220 (0.200)	0.0305 (0.163)	1.458*** (0.471)	0.947 (0.739)
lninf	0.527** (0.243)	0.527** (0.243)	-0.147 (0.101)	0.377 (0.240)	0.377 (0.240)	-0.128 (0.125)	0.547*** (0.203)	-0.140* (0.0794)	0.400* (0.218)	-0.125 (0.123)
tar	0.278** (0.110)	0.278** (0.110)	0.0213 (0.0711)	0.283*** (0.100)	0.283*** (0.100)	0.130 (0.134)	0.268*** (0.0865)	0.00706 (0.0553)	0.299*** (0.0865)	0.108 (0.115)
lnemp	0.127 (2.757)	0.127 (2.757)	1.748 (2.953)	1.650 (2.937)	1.650 (2.937)	2.376 (4.669)	1.951 (2.753)	-0.821 (1.964)	3.029 (2.844)	-0.174 (4.083)
Intax	-0.775 (0.623)	-0.775 (0.623)	0.697 (0.631)	-1.079* (0.611)	-1.079* (0.611)	-0.478 (1.308)	-0.989* (0.555)	1.023** (0.468)	-1.180* (0.610)	-0.203 (1.189)
lneducp	5.166 (5.089)	5.166 (5.089)	-1.881 (1.475)	4.405 (5.068)	4.405 (5.068)	-0.281 (2.011)	2.796 (4.817)	-2.105* (1.273)	2.564 (4.581)	-1.017 (2.440)
lneducs	-0.518 (1.273)	-0.518 (1.273)	0.134 (2.784)	0.500 (1.401)	0.500 (1.401)	4.317 (4.443)	-0.0822 (0.930)	-0.554 (1.727)	0.785 (1.080)	3.708 (3.805)
Constant	-18.78 (25.47)	-18.78 (25.47)	2.315 (18.12)	-30.21 (24.20)	-30.21 (24.20)	-30.96 (35.89)	-16.91 (21.51)	16.61** (6.838)	-28.60 (20.48)	-13.11 (30.66)
Observations	43	43	43	48	48	48	43	43	48	48
Number of countries	10	10	10	11	11	11	10	10	11	11
Country Fixed Effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

**Table B1.14: Impact of Fixed Broadband Internet Subscription on Foreign Internet Retail Sales**

Dependent variable: ln(foreign internet retail sales)	Technology Adoption Variables: $lnFBIS_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnFBIS_{it-1}$ and $lnserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnFBIS_{it}$ ( $lnFBIS_{it-1}$ )	0.493* (0.277)	0.493* (0.277)	0.00889 (0.0718)	-0.0281 (0.337)	-0.0281 (0.337)	0.101 (0.254)	0.375 (0.248)	0.158 (0.109)	-0.00245 (0.212)	0.199 (0.162)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.467*** (0.132)	0.467*** (0.132)	0.236*** (0.0451)	0.384** (0.153)	0.384** (0.153)	0.111 (0.121)	0.607*** (0.153)	0.310*** (0.0555)	0.517*** (0.162)	0.166 (0.140)
Financial variable proxy	0.293 (0.201)	0.293 (0.201)	0.242** (0.0973)	1.459** (0.568)	1.459** (0.568)	1.580*** (0.399)	0.163 (0.163)	-0.0101 (0.132)	1.265*** (0.444)	1.431*** (0.462)
lninf	0.541** (0.220)	0.541** (0.220)	-0.169 (0.139)	0.404 (0.257)	0.404 (0.257)	-0.117 (0.141)	0.473*** (0.160)	-0.146 (0.132)	0.448** (0.223)	-0.108 (0.133)
tar	0.254** (0.0992)	0.254** (0.0992)	-0.0494 (0.0866)	0.303*** (0.102)	0.303*** (0.102)	0.106 (0.125)	0.230*** (0.0885)	-0.0511 (0.0763)	0.318*** (0.0950)	0.0848 (0.116)
lnemp	0.605 (2.355)	0.605 (2.355)	-1.779 (2.523)	1.514 (2.877)	1.514 (2.877)	-0.207 (5.908)	2.592 (2.485)	-2.813 (5.238)	2.851 (2.720)	-1.454 (7.200)
Intax	-0.899 (0.581)	-0.899 (0.581)	1.149* (0.623)	-1.034* (0.623)	-1.034* (0.623)	-0.0595 (1.278)	-1.015* (0.587)	1.229** (0.564)	-1.127* (0.594)	-0.108 (1.137)
lneducp	4.499 (4.460)	4.499 (4.460)	-2.699 (1.819)	4.998 (4.690)	4.998 (4.690)	0.267 (2.559)	0.463 (4.373)	-4.077** (1.788)	3.125 (3.916)	-1.499 (1.819)
lneducs	-1.005 (0.950)	-1.005 (0.950)	0.608 (2.894)	0.315 (1.770)	0.315 (1.770)	3.627 (4.740)	-0.558 (0.635)	0.574 (2.706)	0.553 (1.433)	3.343 (3.578)
Constant	-13.46 (21.95)	-13.46 (21.95)	20.56* (11.60)	-32.10 (23.97)	-32.10 (23.97)	-20.72 (38.47)	-4.784 (22.28)	31.63 (26.86)	-29.67 (21.67)	-5.429 (41.35)
Observations	43	43	43	48	48	48	43	43	48	48
Number of countries	10	10	10	11	11	11	10	10	11	11
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared	0.783	0.783	0.979	0.824	0.824	0.974	0.820	0.983	0.849	0.978
Within R-squared	NA	0.422	0.827	NA	0.571	0.804	0.471	0.854	0.580	0.833

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.



**Table B1.15: Impact of International Internet Bandwidth on Foreign Internet Retail Sales**

Dependent variable: ln(foreign internet retail sales)	Technology Adoption Variables: $lnIB_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnIB_{it-1}$ and $lnserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnIB_{it}$ ( $lnIB_{it-1}$ )	-0.0728 (0.192)	-0.0728 (0.192)	-0.0417 (0.0607)	-0.173 (0.205)	-0.127 (0.154)	-0.0481 (0.0803)	0.104 (0.212)	0.000719 (0.0999)	-0.105 (0.139)	-0.0550 (0.117)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.428*** (0.159)	0.428*** (0.159)	0.243*** (0.0444)	0.409* (0.188)	0.370** (0.166)	0.135 (0.122)	0.557*** (0.183)	0.313*** (0.0862)	0.498** (0.194)	0.239 (0.190)
Financial variable proxy	0.520*** (0.197)	0.520*** (0.197)	0.295*** (0.113)	1.362** (0.472)	1.543*** (0.393)	1.695*** (0.516)	0.327* (0.188)	0.138 (0.122)	1.378*** (0.396)	1.446*** (0.426)
lninf	0.435* (0.233)	0.435* (0.233)	-0.181 (0.142)	0.377 (0.257)	0.279 (0.226)	-0.146 (0.129)	0.470** (0.192)	-0.140 (0.136)	0.329 (0.205)	-0.133 (0.113)
tar	0.258** (0.127)	0.258** (0.127)	-0.0515 (0.0839)	0.269** (0.117)	0.235*** (0.0891)	0.0961 (0.114)	0.274*** (0.0983)	-0.0317 (0.0900)	0.262*** (0.0779)	0.0976 (0.107)
lnemp	0.988 (2.786)	0.988 (2.786)	-1.784 (2.171)	1.937 (3.286)	1.441 (2.938)	-0.547 (5.462)	2.458 (2.777)	-2.294 (3.490)	2.482 (3.032)	-2.015 (5.267)
Intax	-1.022* (0.535)	-1.022* (0.535)	1.128* (0.596)	-1.113 (0.649)	-0.763 (0.600)	0.116 (1.219)	-1.165** (0.499)	1.170* (0.654)	-0.839 (0.607)	0.175 (1.097)
lneducp	5.749 (6.085)	5.749 (6.085)	-2.568 (1.694)	5.119 (5.196)	3.787 (4.322)	0.799 (3.225)	3.539 (5.254)	-3.233* (1.931)	2.244 (3.883)	-0.140 (2.928)
lneducs	0.254 (0.987)	0.254 (0.987)	0.730 (3.040)	0.743 (1.421)	-0.0688 (1.527)	2.915 (4.270)	0.281 (0.867)	1.143 (2.843)	0.333 (1.250)	2.793 (3.613)
Constant	-25.76 (28.96)	-25.76 (28.96)	19.36 (12.13)	-35.00 (25.91)	-24.65 (21.91)	-19.17 (37.90)	-22.08 (22.30)	22.68 (19.03)	-23.56 (18.95)	-7.254 (35.62)
Observations	43	43	43	48	48	48	43	43	48	48
Number of countries	10	10	10	11	11	11	10	10	11	11
Country fixed effect	No	No	Yes	Yes	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.758	0.758	0.980	0.830	0.820	0.974	0.803	0.981	0.844	0.976
Within R-squared	NA	0.378	0.828	NA	0.631	0.804	0.440	0.842	0.639	0.820

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

Table B1.16: Impact of Mobile Broadband Subscription on Foreign Internet Retail Sales

Dependent variable: ln(foreign internet retail sales)	Technology Adoption Variables: $lnMBS_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnMBS_{it-1}$ and $lnserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnMBS_{it}$ ( $lnMBS_{it-1}$ )	-0.0563 (0.173)	-0.0563 (0.173)	0.0319 (0.108)	-0.197 (0.165)	0.0723 (0.0943)	0.0496 (0.0979)	-0.0913 (0.112)	0.244** (0.114)	0.0663 (0.111)	0.233* (0.139)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.426*** (0.139)	0.426*** (0.139)	0.243*** (0.0493)	0.397** (0.147)	0.271** (0.122)	0.122 (0.113)	0.577*** (0.162)	0.278*** (0.0617)	0.264** (0.125)	0.180 (0.136)
Financial variable proxy	0.485** (0.216)	0.485** (0.216)	0.245* (0.145)	1.453*** (0.407)	1.774*** (0.352)	1.709*** (0.551)	0.317 (0.219)	0.203 (0.169)	1.679*** (0.426)	1.275*** (0.373)
lninf	0.433* (0.229)	0.433* (0.229)	-0.187 (0.145)	0.417 (0.240)	0.142 (0.176)	-0.139 (0.123)	0.430** (0.186)	-0.148 (0.120)	-0.0223 (0.118)	-0.116 (0.123)
tar	0.255** (0.121)	0.255** (0.121)	-0.0520 (0.101)	0.280** (0.100)	0.206* (0.116)	0.103 (0.131)	0.246** (0.102)	-0.0558 (0.0887)	0.145 (0.112)	0.0564 (0.107)
lnemp	0.851 (2.416)	0.851 (2.416)	-3.900 (2.581)	1.196 (2.576)	-0.187 (2.874)	-2.267 (5.614)	2.855 (2.511)	-4.616 (4.083)	-2.044 (2.690)	-3.057 (3.603)
Intax	-1.054* (0.549)	-1.054* (0.549)	1.244* (0.655)	-1.079 (0.634)	-0.247 (0.608)	0.0979 (1.268)	-1.305** (0.538)	0.888 (0.615)	0.171 (0.728)	-0.156 (1.278)
lneducp	5.995 (6.373)	5.995 (6.373)	-2.646* (1.464)	5.763 (5.242)	2.534 (3.414)	0.494 (2.931)	3.613 (5.717)	-3.267*** (1.245)	0.971 (2.808)	-1.057 (2.166)
lneducs	0.374 (1.346)	0.374 (1.346)	-0.0373 (3.619)	1.235 (1.531)	-1.121 (1.960)	2.430 (4.549)	0.915 (0.980)	0.387 (3.119)	0.532 (2.783)	2.654 (4.240)
Constant	-26.63 (31.88)	-26.63 (31.88)	31.70*** (10.09)	-37.65 (27.49)	-9.498 (18.83)	-8.855 (36.56)	-25.98 (25.23)	35.71* (20.90)	-1.315 (19.94)	3.231 (27.08)
Observations	42	42	42	47	47	47	41	41	46	46
Number of countries	10	10	10	11	11	11	10	10	11	11
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.758	0.758	0.980	0.833	0.764	0.975	0.800	0.985	0.661	0.979
Within R-squared	NA	0.373	0.834	NA	0.727	0.809	0.401	0.876	0.813	0.840

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

**Table B1.17: Impact of Mobile Telephone Subscription on Foreign Internet Retail Sales**

Dependent variable: ln(foreign internet retail sales)	Technology Adoption Variables: $lnMTS_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnMTS_{it-1}$ and $lnserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnMTS_{it}$ ( $lnMTS_{it-1}$ )	3.029 (2.033)	3.029 (2.033)	1.544** (0.741)	-1.459* (0.815)	-1.459* (0.815)	1.940* (1.041)	0.845 (1.410)	0.430 (0.328)	-0.989* (0.574)	0.640 (0.664)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.322* (0.166)	0.322* (0.166)	0.188*** (0.0631)	0.399** (0.163)	0.399** (0.163)	0.0741 (0.110)	0.526*** (0.192)	0.280*** (0.0733)	0.538*** (0.204)	0.163 (0.144)
Financial variable proxy	0.165 (0.256)	0.165 (0.256)	0.107 (0.173)	1.520*** (0.416)	1.520*** (0.416)	0.978** (0.397)	0.235 (0.249)	0.106 (0.210)	1.293*** (0.453)	1.099*** (0.396)
lninf	0.378* (0.213)	0.378* (0.213)	-0.225* (0.135)	0.476* (0.253)	0.476* (0.253)	-0.186 (0.138)	0.427** (0.193)	-0.185 (0.126)	0.475** (0.223)	-0.167 (0.128)
tar	0.203 (0.134)	0.203 (0.134)	-0.0642 (0.0863)	0.218** (0.104)	0.218** (0.104)	0.0346 (0.116)	0.228** (0.113)	-0.0448 (0.103)	0.267*** (0.0940)	0.0664 (0.117)
lnemp	-6.947 (6.281)	-6.947 (6.281)	-6.383*** (1.937)	3.098 (3.573)	3.098 (3.573)	-4.763 (3.896)	0.0134 (5.777)	-5.182** (2.427)	4.481 (4.219)	-4.010 (4.012)
Intax	-0.935 (0.591)	-0.935 (0.591)	1.240** (0.603)	-1.377** (0.693)	-1.377** (0.693)	0.0105 (1.169)	-1.267** (0.551)	1.242* (0.645)	-1.321* (0.697)	0.0944 (1.239)
lneducp	10.99 (8.367)	10.99 (8.367)	0.123 (1.568)	1.768 (4.759)	1.768 (4.759)	2.002 (2.450)	4.426 (6.570)	-2.703* (1.635)	1.211 (4.728)	-0.520 (2.213)
lneducs	0.589 (1.314)	0.589 (1.314)	-0.288 (3.061)	0.391 (1.057)	0.391 (1.057)	3.301 (3.959)	0.589 (0.802)	0.880 (3.177)	0.656 (0.863)	3.580 (4.216)
Constant	-30.15 (33.39)	-30.15 (33.39)	24.59*** (8.628)	-17.04 (21.89)	-17.04 (21.89)	-12.51 (30.44)	-19.94 (24.22)	31.66** (16.08)	-23.31 (18.81)	-1.106 (29.49)
Observations	40	40	40	45	45	45	40	40	45	45
Number of countries	9	9	9	10	10	10	9	9	10	10
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.783	0.783	0.983	0.850	0.850	0.978	0.806	0.983	0.864	0.978
Within R-squared	NA	0.492	0.856	NA	0.461	0.837	0.460	0.860	0.508	0.833

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

Table B1.18: Impact of Fixed Telephone Lines on Foreign Internet Retail Sales

Dependent variable: ln(foreign internet retail sales)	Technology Adoption Variables: $lnFTL_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnFTL_{it-1}$ and $lnserver_{it-1}$			
	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnFTL_{it}$ ( $lnFTL_{it-1}$ )	-0.386 (0.342)	-0.386 (0.342)	-0.509 (0.372)	-0.900*** (0.308)	-0.900*** (0.308)	0.375 (0.429)	-0.443 (0.331)	-0.466* (0.268)	-0.946*** (0.232)	0.160 (0.531)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.381** (0.163)	0.381** (0.163)	0.179** (0.0722)	0.224* (0.131)	0.224* (0.131)	0.150 (0.103)	0.543*** (0.178)	0.269*** (0.0774)	0.385** (0.159)	0.217* (0.131)
Financial variable proxy	0.670** (0.310)	0.670** (0.310)	0.340** (0.132)	2.188*** (0.357)	2.188*** (0.357)	1.798** (0.565)	0.574* (0.316)	0.237 (0.171)	2.025*** (0.272)	1.458*** (0.505)
lninf	0.459** (0.213)	0.459** (0.213)	-0.191 (0.131)	0.493** (0.223)	0.493** (0.223)	-0.170 (0.124)	0.467*** (0.170)	-0.140 (0.111)	0.504*** (0.178)	-0.155 (0.112)
tar	0.295** (0.124)	0.295** (0.124)	-0.0940 (0.0922)	0.257*** (0.0899)	0.257*** (0.0899)	0.103 (0.158)	0.310*** (0.107)	-0.0669 (0.0926)	0.271*** (0.0803)	0.0860 (0.139)
lnemp	1.522 (2.630)	1.522 (2.630)	-3.766 (2.712)	1.345 (2.596)	1.345 (2.596)	-4.094 (5.004)	4.044* (2.180)	-3.571 (2.934)	3.884 (2.662)	-5.328 (3.709)
Intax	-1.164* (0.622)	-1.164* (0.622)	1.280* (0.686)	-1.346*** (0.519)	-1.346*** (0.519)	0.100 (1.289)	-1.226** (0.566)	1.128* (0.665)	-1.284*** (0.435)	0.162 (1.249)
lneducp	7.263 (6.927)	7.263 (6.927)	-1.566 (1.614)	6.693 (5.634)	6.693 (5.634)	0.615 (3.198)	4.195 (6.049)	-3.223*** (1.156)	3.377 (5.146)	0.0667 (3.798)
lneducs	0.890 (1.170)	0.890 (1.170)	0.226 (3.434)	2.277** (1.146)	2.277** (1.146)	2.910 (4.399)	1.131 (0.991)	1.092 (3.031)	2.161** (0.900)	3.074 (3.987)
Constant	-37.35 (33.75)	-37.35 (33.75)	26.89*** (9.297)	-48.71* (25.46)	-48.71* (25.46)	-5.735 (30.91)	-35.24 (26.96)	29.62** (14.15)	-43.60** (20.95)	3.675 (25.87)
Observations	40	40	40	45	45	45	40	40	45	45
Number of countries	9	9	9	10	10	10	9	9	10	10
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.769	0.769	0.982	0.888	0.888	0.975	0.811	0.984	0.908	0.977
Within R-squared	NA	0.399	0.848	NA	0.603	0.814	0.456	0.867	0.664	0.827

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

**Table B1.19: Impact of Internet Penetration on Domestic Internet Retail Sales**

Dependent variable: ln(domestic internet retail sales)	Technology Adoption Variables: $lnIUT_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnIUT_{it-1}$ and $lnserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnIUT_{it}$ ( $lnIUT_{it-1}$ )	-1.061 (0.679)	-1.061 (0.679)	1.407*** (0.308)	-2.792*** (0.849)	0.415 (0.497)	1.170** (0.456)	-0.984* (0.552)	0.992*** (0.188)	-0.0328 (0.452)	0.593 (0.377)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.719*** (0.176)	0.719*** (0.176)	0.0412 (0.0522)	0.569*** (0.175)	0.0908 (0.0679)	0.00332 (0.0576)	0.955*** (0.220)	0.107** (0.0527)	0.192** (0.0933)	0.104 (0.0884)
Financial variable proxy	0.502 (0.307)	0.502 (0.307)	0.113 (0.123)	2.706** (0.882)	1.694*** (0.655)	0.908* (0.490)	0.245 (0.285)	0.235** (0.111)	1.936** (0.796)	1.094* (0.654)
lninf	0.585** (0.270)	0.585** (0.270)	-0.113* (0.0670)	0.474 (0.286)	-0.0897 (0.0751)	-0.110 (0.0673)	0.548** (0.244)	-0.123 (0.0776)	-0.0540 (0.0870)	-0.117 (0.0835)
tar	0.120 (0.156)	0.120 (0.156)	-0.0207 (0.0732)	0.137 (0.153)	0.0197 (0.0809)	0.0396 (0.0935)	0.126 (0.111)	-0.0656 (0.0516)	0.0126 (0.0743)	-0.00313 (0.0684)
lnemp	-4.379 (2.997)	-4.379 (2.997)	3.630 (2.702)	-3.128 (2.591)	-2.730 (2.876)	3.314 (2.502)	-1.096 (3.021)	-0.0808 (4.314)	-4.855 (3.037)	-0.842 (3.925)
Intax	0.0522 (0.781)	0.0522 (0.781)	0.242 -0.508	0.00761 (0.768)	0.593 (0.622)	-0.126 (0.755)	-0.320 (0.756)	0.735** (0.365)	0.916* (0.481)	0.502 (0.656)
lneducp	7.342 (8.825)	7.342 (8.825)	-1.058 (1.538)	6.399 (8.160)	2.546 (3.079)	0.666 (1.706)	3.949 (7.294)	-1.360 (1.685)	2.681 (3.627)	0.744 (2.958)
lneducs	0.492 (2.207)	0.492 (2.207)	1.021 (1.995)	1.813 (2.292)	-1.010 (2.250)	2.109 (2.392)	1.253 (1.589)	0.183 (1.462)	-1.702 (1.973)	0.647 (2.092)
Constant	-10.23 (44.81)	-10.23 (44.81)	-13.88 (13.33)	-25.16 (37.33)	2.783 (21.18)	-29.33 (17.97)	-11.61 (35.48)	6.820 (18.47)	12.75 (23.62)	-6.119 (24.86)
Observations	43	43	43	48	48	48	43	43	48	48
Number of countries	10	10	10	10	11	11	10	10	11	11
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.810	0.810	0.996	0.847	0.373	0.996	0.854	0.996	0.552	0.995
Within R-squared	0.376	0.376	0.908	NA	0.871	0.892	0.406	0.912	0.859	0.883

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

Table B1.20: Impact of Fixed Broadband Internet Subscription on Domestic Internet Retail Sales

Dependent variable: ln(domestic internet retail sales)	Technology Adoption Variables: $lnFBIS_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnFBIS_{it-1}$ and $lnserver_{it-1}$			
	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnFBIS_{it}$ ( $lnFBIS_{it-1}$ )	-0.418 (0.396)	-0.418 (0.396)	0.0685 (0.0782)	-1.101 (0.609)	-0.643 (0.460)	0.0902 (0.195)	-0.414* (0.251)	0.164** (0.0800)	-0.00510 (0.143)	0.234** (0.0935)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.683*** (0.179)	0.683*** (0.179)	0.158** (0.0637)	0.530** (0.216)	0.384** (0.159)	0.0806 (0.0902)	0.935*** (0.230)	0.215*** (0.0829)	0.309** (0.121)	0.103 (0.112)
Financial variable proxy	0.542 (0.388)	0.542 (0.388)	0.396*** (0.146)	2.428* (1.200)	2.494*** (0.960)	1.745*** (0.264)	0.253 (0.308)	0.195 (0.227)	2.064*** (0.758)	1.646*** (0.356)
lninf	0.643** (0.281)	0.643** (0.281)	-0.135 (0.133)	0.501 (0.342)	0.350 (0.284)	-0.102 (0.0789)	0.683** (0.289)	-0.130 (0.133)	0.115 (0.166)	-0.0974 (0.0916)
tar	0.149 (0.154)	0.149 (0.154)	-0.112 (0.0905)	0.271 (0.152)	0.162 (0.123)	-0.00509 (0.0757)	0.170 (0.112)	-0.127* (0.0740)	0.0667 (0.101)	-0.0301 (0.0636)
lnemp	-5.379* (3.163)	-5.379* (3.163)	-1.229 (3.139)	-3.879 (3.438)	-4.207 (2.896)	-1.381 (5.144)	-2.196 (3.120)	-2.179 (4.596)	-5.629* (2.931)	-2.309 (6.897)
Intax	0.347 (0.818)	0.347 (0.818)	0.831 (0.621)	0.258 (1.026)	0.356 (0.791)	0.694 (0.652)	-0.174 (0.742)	0.952* (0.535)	0.835* (0.507)	0.605 (0.559)
lneducp	7.470 (8.975)	7.470 (8.975)	-2.152 (2.426)	11.40 (10.21)	7.997 (6.870)	1.933 (3.561)	6.173 (8.799)	-3.431** (1.738)	4.228 (4.693)	0.146 (2.251)
lneducs	0.426 (3.016)	0.426 (3.016)	1.804 (2.743)	2.362 (4.485)	-1.863 (4.008)	0.453 (2.429)	1.487 (2.323)	1.389 (2.466)	-3.586 (2.823)	0.233 (1.848)
Constant	-10.18 (48.05)	-10.18 (48.05)	10.54 (13.05)	-54.46 (57.95)	-18.27 (39.21)	-10.71 (26.70)	-21.58 (45.28)	22.53 (19.79)	15.04 (26.85)	2.889 (34.67)
Observations	43	43	43	48	48	48	43	43	48	48
Number of countries	10	10	10	11	11	11	10	10	11	11
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.795	0.795	0.992	0.847	0.759	0.995	0.841	0.993	0.648	0.996
Within R-squared	NA	0.463	0.812	NA	0.592	0.861	0.469	0.834	0.800	0.898

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

**Table B1.21: Impact of International Internet Bandwidth on Domestic Internet Retail Sales**

Dependent variable: ln(domestic internet retail sales)	Technology Adoption Variables: $lnIB_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnIB_{it-1}$ and $lnserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnIB_{it}$ ( $lnIB_{it-1}$ )	-0.602** (0.242)	-0.602** (0.242)	0.0144 (0.0621)	-0.829** (0.286)	-0.0337 (0.0935)	0.0550 (0.0762)	-0.532*** (0.165)	0.00311 (0.0706)	-0.164 (0.101)	0.0113 (0.0712)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.776*** (0.194)	0.776*** (0.194)	0.160*** (0.0587)	0.779*** (0.201)	0.180** (0.0838)	0.0653 (0.0871)	1.045*** (0.247)	0.216** (0.0966)	0.381*** (0.141)	0.133 (0.136)
Financial variable proxy	0.457 (0.304)	0.457 (0.304)	0.411** (0.174)	1.038 (0.827)	2.157*** (0.611)	1.884*** (0.342)	0.102 (0.279)	0.349** (0.175)	1.927*** (0.650)	1.720*** (0.339)
lninf	0.673* (0.355)	0.673* (0.355)	-0.142 (0.134)	0.568 (0.334)	-0.0280 (0.108)	-0.0978 (0.0722)	0.558* (0.299)	-0.123 (0.132)	0.0387 (0.141)	-0.0951 (0.0661)
tar	0.0655 (0.132)	0.0655 (0.132)	-0.119 (0.0853)	0.124 (0.147)	0.0212 (0.0807)	0.000378 (0.0727)	0.0804 (0.0970)	-0.106 (0.0916)	0.0352 (0.0823)	-0.00372 (0.0722)
lnemp	-4.477 (3.383)	-4.477 (3.383)	-1.234 (3.097)	-2.166 (3.500)	-5.744* (3.189)	-1.371 (5.254)	-0.829 (3.588)	-1.619 (3.014)	-5.299* (2.736)	-2.012 (4.724)
Intax	0.319 (0.940)	0.319 (0.940)	0.881 (0.596)	-0.0155 (1.114)	0.968** (0.389)	0.696 (0.666)	-0.273 (0.754)	0.888 (0.614)	0.999** (0.428)	0.757 (0.579)
lneducp	6.854 (9.370)	6.854 (9.370)	-2.242 (2.326)	11.47 (11.88)	4.253 (4.332)	2.047 (3.430)	2.730 (8.048)	-2.557 (2.428)	4.031 (4.671)	1.668 (3.422)
lneducs	1.078 (2.882)	1.078 (2.882)	1.598 (2.918)	2.273 (3.834)	-3.341 (2.652)	0.216 (2.300)	1.521 (2.039)	1.990 (2.444)	-3.556 (2.676)	0.216 (1.875)
Constant	-12.67 (50.06)	-12.67 (50.06)	11.91 (13.22)	-52.13 (62.41)	14.85 (24.97)	-10.98 (26.24)	-10.19 (37.48)	13.12 (15.37)	15.24 (21.70)	-5.813 (24.75)
Observations	43	43	43	48	48	48	43	43	48	48
Number of countries	10	10	10	11	11	11	10	10	11	11
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.821	0.821	0.992	0.826	0.590	0.995	0.868	0.993	0.680	0.995
Within R-squared	NA	0.357	0.810	NA	0.825	0.862	0.419	0.820	0.798	0.870

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

Table B1.22: Impact of Mobile Broadband Subscription on Domestic Internet Retail Sales

Dependent variable: ln(domestic internet retail sales)	Technology Adoption Variables: $lnMBS_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnMBS_{it-1}$ and $lnserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnMBS_{it}$ ( $lnMBS_{it-1}$ )	-0.141 (0.312)	-0.141 (0.312)	0.0325 (0.146)	-0.301 (0.364)	0.0815 (0.0855)	0.0785 (0.107)	-0.0667 (0.181)	0.376*** (0.104)	0.275*** (0.0819)	0.303*** (0.0910)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.734*** (0.189)	0.734*** (0.189)	0.168** (0.0691)	0.695*** (0.175)	0.109 (0.0680)	0.0872 (0.0854)	0.968*** (0.223)	0.135** (0.0571)	0.126 (0.0831)	0.106 (0.0964)
Financial variable proxy	0.285 (0.370)	0.285 (0.370)	0.418** (0.164)	1.392 (0.909)	1.975*** (0.397)	1.881*** (0.401)	-0.0109 (0.360)	0.470*** (0.140)	1.580*** (0.311)	1.493*** (0.368)
lninf	0.702** (0.318)	0.702** (0.318)	-0.148 (0.147)	0.726* (0.359)	-0.0847 (0.0776)	-0.0980 (0.0770)	0.706*** (0.265)	-0.109 (0.123)	-0.0750 (0.0739)	-0.0808 (0.0847)
tar	0.102 (0.163)	0.102 (0.163)	-0.117 (0.100)	0.261 (0.177)	0.0118 (0.0719)	0.00612 (0.0781)	0.0935 (0.156)	-0.148** (0.0744)	-0.0394 (0.0491)	-0.0513 (0.0492)
lnemp	-5.699* (3.151)	-5.699* (3.151)	-2.062 (4.808)	-4.350 (3.516)	-3.638 (3.607)	-1.660 (5.522)	-2.727 (3.019)	-2.017 (4.847)	-2.941 (2.471)	-1.747 (2.619)
Intax	0.297 (0.888)	0.297 (0.888)	0.924 (0.637)	0.306 (1.119)	0.846 (0.550)	0.767 (0.684)	-0.0945 (0.907)	0.234 (0.604)	0.545 (0.524)	0.441 (0.643)
lneducp	7.332 (8.861)	7.332 (8.861)	-2.204 (2.133)	11.86 (9.746)	2.496 (3.019)	1.999 (3.199)	3.513 (7.306)	-2.696*** (0.802)	0.988 (2.115)	0.589 (2.166)
lneducs	0.357 (3.674)	0.357 (3.674)	1.115 (3.649)	1.353 (4.737)	-1.888 (2.276)	-0.816 (2.709)	0.798 (2.613)	1.652 (2.627)	-1.103 (2.180)	-0.506 (2.670)
Constant	-7.022 (51.33)	-7.022 (51.33)	17.12 (18.79)	-45.65 (57.71)	9.452 (21.64)	-5.220 (28.08)	-3.331 (38.27)	17.21 (24.24)	12.96 (18.30)	2.911 (19.85)
Observations	42	42	42	47	47	47	41	41	46	46
Number of countries	10	10	10	11	11	11	10	10	11	11
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.792	0.792	0.992	0.775	0.480	0.995	0.834	0.995	0.357	0.996
Within R-squared	NA	0.466	0.810	NA	0.863	0.866	0.517	0.887	0.903	0.904

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.



**Table B1.23: Impact of Mobile Telephone Subscription on Domestic Internet Retail Sales**

Dependent variable: ln(domestic internet retail sales)	Technology Adoption Variables: $lnMTS_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnMTS_{it}$ and $lnserver_{it}$			
	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnMTS_{it}$ ( $lnMTS_{it-1}$ )	-3.523 (2.697)	-3.523 (2.697)	2.400*** (0.492)	-5.676*** (1.147)	-5.676*** (1.147)	2.218*** (0.577)	-2.677* (1.499)	1.077** (0.473)	-4.386*** (0.853)	1.083* (0.651)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.814*** (0.179)	0.814*** (0.179)	0.0728* (0.0442)	0.840*** (0.164)	0.840*** (0.164)	0.0337 (0.0540)	1.079*** (0.225)	0.108* (0.0637)	1.132*** (0.202)	0.0667 (0.0879)
Financial variable proxy	0.428 (0.551)	0.428 (0.551)	0.216** (0.104)	1.361** (0.683)	1.361** (0.683)	1.055** (0.432)	0.0836 (0.402)	0.259 (0.196)	0.833 (0.559)	1.149** (0.514)
lninf	0.763** (0.314)	0.763** (0.314)	-0.206 (0.129)	0.753** (0.322)	0.753** (0.322)	-0.157* (0.0825)	0.727*** (0.257)	-0.178 (0.128)	0.736*** (0.284)	-0.156* (0.0862)
tar	0.0704 (0.192)	0.0704 (0.192)	-0.143** (0.0726)	0.0844 (0.108)	0.0844 (0.108)	-0.0719 (0.0572)	0.104 (0.155)	-0.125 (0.0945)	0.196** (0.0858)	-0.0421 (0.0574)
lnemp	1.842 (5.632)	1.842 (5.632)	-5.892** (2.482)	6.956** (3.481)	6.956** (3.481)	-4.699 (3.396)	4.503 (4.970)	-2.701 (2.306)	9.733** (3.869)	-2.779 (3.720)
Intax	-0.303 (1.094)	-0.303 (1.094)	0.838* (0.499)	-0.796 (0.935)	-0.796 (0.935)	0.693 (0.554)	-0.445 (0.925)	0.823 (0.552)	-0.570 (0.931)	0.754 (0.614)
lneducp	1.783 (9.584)	1.783 (9.584)	2.104 (1.643)	-1.100 (8.910)	-1.100 (8.910)	3.811*** (1.376)	0.951 (7.909)	-1.516 (2.080)	-0.361 (7.708)	1.175 (2.438)
lneducs	-0.271 (2.355)	-0.271 (2.355)	0.925 (2.306)	0.186 (2.251)	0.186 (2.251)	0.283 (1.808)	0.733 (1.754)	2.159 (2.962)	0.902 (1.697)	0.836 (2.059)
Constant	5.921 (49.60)	5.921 (49.60)	5.152 (11.42)	-0.472 (45.56)	-0.472 (45.56)	-9.550 (16.04)	-9.642 (36.17)	8.299 (14.90)	-23.92 (33.58)	-4.004 (19.43)
Observations	40	40	40	45	45	45	40	40	45	45
Number of countries	9	9	9	10	10	10	9	9	10	10
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.807	0.807	0.995	0.855	0.855	0.997	0.856	0.995	0.882	0.996
Within R-squared	NA	0.351	0.878	NA	0.239	0.913	0.351	0.869	0.213	0.899

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.

Table B1.24: Impact of Fixed Telephone Lines on Domestic Internet Retail Sales

Dependent variable: ln(domestic internet retail sales)	Technology Adoption Variables: $lnFTL_{it}$ and $lnserver_{it}$						Lagged Technology Adoption Variables: $lnFTL_{it-1}$ and $lnserver_{it-1}$			
Financial Variable Proxy	Credit Card Penetration:			Debit Card Penetration			Credit Card Penetration		Debit Penetration	
	Pooled OLS	RE	FE	Pooled OLS	RE	FE	RE	FE	RE	FE
$lnFTL_{it}$ ( $lnFTL_{it-1}$ )	0.426 (0.801)	0.426 (0.801)	-0.396 (0.389)	-0.795 (0.906)	-0.795 (0.906)	0.229 (0.342)	0.489 (0.733)	-0.735** (0.291)	-0.741 (0.769)	-0.125 (0.429)
$lnserver_{it}$ ( $lnserver_{it-1}$ )	0.744*** (0.176)	0.744*** (0.176)	0.0961 (0.0746)	0.555*** (0.165)	0.555*** (0.165)	0.104* (0.0629)	0.981*** (0.216)	0.121 (0.0832)	0.848*** (0.154)	0.136 (0.103)
Financial variable proxy	-0.144 (0.620)	-0.144 (0.620)	0.535*** (0.163)	1.971 (1.259)	1.971 (1.259)	1.905*** (0.428)	-0.381 (0.516)	0.524*** (0.164)	1.565 (1.125)	1.596*** (0.450)
lninf	0.671** (0.333)	0.671** (0.333)	-0.157 (0.131)	0.751** (0.347)	0.751** (0.347)	-0.134* (0.0687)	0.670** (0.300)	-0.0953 (0.115)	0.765** (0.309)	-0.109 (0.0887)
tar	-0.0315 (0.163)	-0.0315 (0.163)	-0.171* (0.0917)	0.275 (0.177)	0.275 (0.177)	-0.00970 (0.0913)	-0.00318 (0.134)	-0.165** (0.0806)	0.322** (0.157)	-0.0339 (0.0756)
lnemp	-7.939* (4.662)	-7.939* (4.662)	-2.091 (5.332)	-3.377 (3.837)	-3.377 (3.837)	-3.336 (5.547)	-4.924 (4.668)	-0.341 (4.228)	0.676 (3.457)	-3.037 (4.188)
Intax	-0.0321 (0.923)	-0.0321 (0.923)	0.775 (0.600)	0.142 (1.133)	0.142 (1.133)	0.790 (0.698)	-0.312 (0.877)	0.602 (0.564)	0.153 (1.027)	0.775 (0.711)
lneducp	6.193 (7.625)	6.193 (7.625)	-1.284 (2.708)	12.39 (10.39)	12.39 (10.39)	2.225 (3.762)	2.885 (6.880)	-2.634* (1.360)	7.469 (9.148)	1.408 (3.549)
lneducs	-0.587 (2.515)	-0.587 (2.515)	2.249 (2.762)	1.656 (4.347)	1.656 (4.347)	0.00322 (2.482)	0.0607 (2.138)	2.739 (2.482)	1.584 (3.664)	0.353 (2.514)
Constant	13.48 (38.78)	13.48 (38.78)	9.771 (21.95)	-55.09 (57.70)	-55.09 (57.70)	-3.658 (26.69)	13.13 (31.29)	7.642 (20.02)	-48.64 (47.76)	0.337 (24.54)
Observations	40	40	40	45	45	45	40	40	45	45
Number of countries	9	9	9	10	10	10	9	9	10	10
Country fixed effect	No	No	Yes	No	No	Yes	No	Yes	No	Yes
Overall R-squared/R-squared	0.800	0.800	0.993	0.784	0.784	0.995	0.840	0.995	0.806	0.995
Within R-squared	NA	0.457	0.831	0.590	0.590	0.863	0.472	0.865	0.637	0.872

FE = fixed effects, NA = not applicable, OLS = ordinary least squares, RE = random effects.

Notes: Robust standard errors are in parenthesis. \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%.

Source: Authors' estimation.